How a retailer can profit from facts

Version française de cette publication disponible sur demande.

Do you want to

- estimate the size of your market
  and calculate your share?

- find out more about your customers—where they live,
  what they buy, how much money they have to spend,
  what sort of homes they live in?

- compare your costs with those of similar firms?

- forecast consumer demand for your products?

- reach the appropriate market when
  advertising your business?

if you do,
but you don't know how to,
this booklet can help you.

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Introduction

To many owners and managers of businesses, Statistics Canada is a government agency which asks a lot of questions that take time and money to answer. What is less widely known is that, as a result of asking those questions, Statistics Canada has a lot of answers—answers which can help business people in small and large companies operate more efficiently and effectively.

Large companies, with economic and research staffs, tend to be aware of the kinds of information published by Statistics Canada and how it can be used. This booklet is designed to illustrate how this information can help the managers of smaller businesses who are not familiar with what is available and have little or no training in the use of statistics.

Some years ago, the then Dominion Bureau of Statistics produced a booklet illustrating how an owner-operator of a small business could take advantage of Canada's official statistics. Its popularity has prompted Statistics Canada to plan a series of booklets, each one aimed at a different sector of business. This one is designed for retailers and is the second booklet in the series. The first, published in April, 1977, was for manufacturers.

In this booklet, case studies are used to illustrate the information available from Statistics Canada and some of the ways it can be used. Although the cases are fictitious, they are all typical of the way Statistics Canada information is used by businesses. The fact that a particular retail trade or type of problem is not discussed here does not mean that information relevant to it is not available. It probably is. A section is included on where to begin a search for data. For easy reference, a list of the regional offices of Statistics Canada is given at the back of the book on page 54.

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The value of statistics

The manager of a small enterprise wears many hats. At one and the same time he or she has to be an expert in finance, production, marketing, purchasing, labour relations, and so on. Each day decisions have to be made, some of which affect the day to day operation of the business while others relate to the longer term.

How does one go about reaching a good decision? Obviously the process will vary depending on the person and the type of decision. However, it is generally true to say that the more factual the information the decision maker has, the better the chances of arriving at a good decision.

The information may take many forms—it may be internal information from a firm's records, or it may be external information on the value of sales of an industry, the number employed, the size, location and characteristics of a market, etc. This is where Statistics Canada can help.

Statistics Canada publishes information on a wide range of subjects. There are individual reports on industries, information on prices, wages, agriculture, transport, communication, construction, imports and exports, government finance, public health and hospitals, education, family expenditure, population, housing, retail trade, the judicial system and much more.

With this information it is possible to compare the performance of an individual firm with that of others in the industry or to find out if the market for a product is expanding or contracting. Market size and share, seasonal patterns, price changes, wage costs, operating ratios, business prospects are the things which concern business people and they can all be calculated from Statistics Canada data.

Statistics Canada information is mainly derived from the surveys it carries out. For the protection of respondents the Statistics Act, which governs Statistics Canada's operation, does not permit information to be published in any way that would identify an individual business or person. Subject to this basic restriction, however, Statistics Canada's policy is to make as much useful information available to as many people as possible, and at minimal cost.

Published statistics are rarely the complete answer to a problem and anyone using statistics should also make use of the many other sources of information available to business people. Nevertheless, Statistics Canada is probably the most important single source of external information and the following case studies illustrate how some of the information it publishes can be used and what type of questions it can answer or help to answer.

The case studies are also designed to show that making use of statistics does not necessarily require any formal training or help from outsiders. The information is readily available, and most of it is easily understandable. The ability to do ordinary arithmetic and to think in an orderly fashion are often the only skills required.

Case study 1.

Case study 1: Going into business

For the past four years, Flora Smart had managed a relatively large florist's shop in Toronto. When her husband died a year ago, she had started thinking about going into business for herself. Now she had come to a decision. She would open her own florist's shop. She didn't want to raise her two children in a large city by herself and she had decided to move to either Peterborough or Guelph, two smaller cities of similar size. She liked both places very much and they were reasonably close to Toronto, where she had family and friends.

Flora remembered that from time to time as manager of Primrose Lane Co. Ltd.'s downtown Toronto branch she had had to fill in Statistics Canada questionnaires. Not only had she found that completing them was somewhat time-consuming and bothersome, but she had always been curious as to why so many questions were asked and what were their purpose. If Statistics Canada collected so much information, perhaps it would have some information that would be useful to her in choosing between Peterborough and Guelph.

When Flora arrived at the Toronto office of Statistics Canada, she explained her questions to one of the inquiries staff in the reference centre. Using the "Statistics Canada Catalogue", they identified a number of publications that would be of interest to Flora.

The first publication that Flora and the inquiries officer looked at was from the 1971 Census of Merchandising and Services in Canada. It was entitled "Retail Trade: Business Location Statistics: Provinces and Cities by Kind of Business", Catalogue No. 97-702. From this publication they extracted the following data:

Retail trade by kind of business, 1971

Place	Kind of business	Number of locations	Net sales and receipts	Inventory at end of year	Number of working proprietors	Paid employees	
						Number last week of September	Total Payroll for the year
			$ 000	$ 000			$ 000
Peterborough	Florists	8	422	18	7	29	97
Guelph	Florists	4	399	12	6	11	57

Flora found these statistics very interesting. Net sales per florist shop location in 1971 were considerably higher in Guelph than they were in Peterborough, $84,750 and $52,750 respectively. The statistics suggested to Flora that the market in Guelph was possibly underdeveloped, at least in 1971, and that there appeared to be room for another business. The two places had roughly the same area population in 1971, 63,531 for Peterborough and 62,659 for Guelph, and Flora saw no apparent reason why total net sales in Guelph should not approximate more closely those in Peterborough.

Flora, it should be noted, had made a couple of assumptions regarding consumers in the two areas. First, she had assumed that income levels were similar and, therefore, the ability to purchase flowers and plants was relatively the same. Second, she had assumed that there was no difference in the desire on the part of consumers in the two communities to buy flowers and plants. These assumptions were important. The first it was possible to check; the second it was not.

In order to compare income levels, the inquiries officer furnished Flora with the following information.

Average household and family income,
Peterborough and Guelph census
agglomerations, 1971 Census of Canada[1]

Census agglomeration (C.A.)[2]	Average household income	Average family income
Peterborough[3]	$ 9,944	$10,529
Guelph[3]	$10,289	$10,638

[1] Income statistics from the 1971 Census refer to income received during 1970.

[2] Census agglomeration: an area including small urban centres and having a population of less than 100,000 but at least 2,000.

[3] The Peterborough C.A. includes the townships of Douro and the village of Lakefield in addition to the city of Peterborough. Guelph city and Guelph township comprise the Guelph C.A.
Sources: Peterborough and Guelph Census tract Series B, Catalogue Nos. 95-746 and 95-741 respectively.

As Flora had established then, there was not a great deal of difference in either average household income or average family income between the two places. Interestingly, though, the market which Flora thought was underdeveloped in 1971 was the market with the slightly higher average incomes! Furthermore, Guelph seemed to be a faster-growing market as the population of the Guelph census agglomeration had reached 70,388 by 1976 while the Peterborough census agglomeration had grown to only 65,293.

One thing worried Flora a bit. Did the Guelph market appear underdeveloped because in that area a considerable proportion of the trade took place outside of florist shops—perhaps, for example, in department stores, lawn and garden supply stores or even directly with the growers? The information Flora had obtained from the 1971 Census of Merchandising and Services was by kind of business only. What Flora now wanted to know was commodity sales by kind of outlet. In particular she wanted to know, for both communities, the value of flowers and plants purchased from florists compared with the dollar amount sold of these products by all types of businesses. The inquiries officer explained that such information was not available below the provincial level. The information which was available on retail sales came from the 1974 Retail Commodity Survey. Flora was able to determine from the commodity survey that in 1974 approximately 85% of flowers and nursery stock sales through retail outlets in Ontario were made through florists. Flowers and nursery stock was a broader commodity classification than Flora wanted, but she felt that if the classification had been simply flowers and plants the proportion of sales through florists would have been, in all likelihood, greater than 85%. These facts were in keeping with what Flora knew from her years in the business.

The inquiries officer also showed Flora a publication on the greenhouse industry, Catalogue No. 22-202. From this publication they determined that in Ontario in 1974, about 25% of sales of ornamental flowers and plants by greenhouses went directly to the public. Flora wondered whether the percentage of direct sales to the public might be even higher in the Guelph area.

She knew she would have to investigate these questions further.

Much of the information that Flora had been using was from censuses conducted in 1971. The reason for this is that for the size of the geographical areas with which she was concerned there were, outside of census statistics, only a relatively small number of statistical series available. As the inquiries officer explained, censuses (i.e., surveys which include all respondents under consideration) take a long time to complete and are very costly to conduct. For these and other reasons most large censuses are carried out only periodically, usually at intervals of five, but in some cases 10, years. On the other hand most sample surveys (i.e., surveys which include just some of the respondents under consideration) are conducted more frequently but they yield much less statistical detail than do censuses.

Flora knew that she would have to continue her investigation at the local level. One thing she would have to do would be to contact municipal authorities to get more current information on the number of florists in each area. Also, she wanted

to search for additional information at the local public libraries and to talk with some of the merchants in both communities. And finally, Flora was well aware of the fact that she still had a great deal to do in terms of comparing costs, e.g., in the area of licence fees and business taxes, in investigating the differences in commercial property values and rents, and in determining the relative expense of acquiring products from suppliers.

Next, Flora wished to update the sales figures from the 1971 Census of Merchandising and Services by the percentage change between 1971 and 1976 of sales of florists shops in Ontario. The required statistics were found in the monthly publication, "Retail Trade", Catalogue No. 63-005. She felt this publication would be useful to her in the future for comparing her sales with those of the industry as a whole.

During her last few years in the business, Flora had noticed a large increase in the demand for potted plants, particularly, she believed, among apartment dwellers. From the Series A Census tract bulletins, she extracted the following data:

Number of occupied dwellings by
type of dwellings, 1971 Census of Canada

	Peterborough	Guelph
Single detached	13,150	11,460
Single attached	1,370	1,520
Apartment (flat)	4,270	5,240
Total[1]	18,810	18,215

[1] Columns do not total exactly because of rounding.

The fact that Guelph had, in 1971, about a thousand more occupied apartments than Peterborough intrigued her. She asked the inquiries officer if there was any way in which the 1971 apartment figures could be brought up to date. The inquiries officer put together the following table for her:

Number of apartment completions, 1971 to 1976

Census Agglomeration	June to December 1971[1]	1972	1973	1974	1975	1976	Total
Peterborough	189	201	155	292	443	504	1,784
Guelph	458	358	24	113	853	429	2,235

[1] Estimated Source: Housing Starts and Completions, monthly, Catalogue No. 64-002.

The apartment completion statistics, of course, did not represent net additions to the stock of apartments. To obtain net figures the number of apartment demolitions would have to be subtracted. Nor did the apartment completion statistics say anything about the numbers which were occupied or unoccupied. Nevertheless, Flora felt that she had sufficient data to make a current comparison between the two communities.

Flora was not able to answer all her questions from Statistics Canada data. Statistics Canada was only a place to begin her investigation. She would have to do a lot more research before she made final decisions. However, she was pleased with what she had found out and with the friendly assistance she had been given.

Case study 2.

Case study 2: Forecasting demand and estimating market size

Bob Bright was general manager of ABC Ltd. of Winnipeg. The company had two stores: a centrally located main store which sold T.V. sets and appliances; and a smaller T.V. and stereo store in a shopping centre in an established residential area of the city. Sales at the main store had been growing steadily over the years and floor space was beginning to be a problem. Bob had recommended to the owner that the premises be enlarged to accommodate future increases in sales. The owner was inclined to agree with Bob, but before he made a final decision he wanted Bob to make some estimates of the future market for major appliances. The owner felt the company needed to base its decision on a more reliable indicator than its own past sales receipts.

Bob started his search at the public library. The library had a great deal of statistical information and the librarian gave him a lot of assistance, explaining the types of data which were obtainable as well as their sources. However, Bob's problem involved using available data to forecast the future. The librarian could not help him with this type of problem. However, the suggestion was made that perhaps a User Advisory Services officer at Statistics Canada would be the person to see.

Bob took the librarian's advice and visited the Winnipeg office of Statistics Canada. He discussed his task with the regional advisor and together they sat down to tackle the problem. The first thing they decided to do was to make an annual estimate of the number of T.V. sets which would be demanded in the Winnipeg market from 1976 to 1986. They split the problem into two parts: new demand and replacement demand. In order to calculate new demand they needed to know the increase over the next 10 years in the number of households. Starting with the actual number of households as determined by the 1971 Census, they chose rates of increase for Manitoba from the publication, "Household and Family Projections for Canada and the Province to 2001", and applied them to the city of Winnipeg and the Winnipeg census metropolitan area. They prudently chose the rates of the lowest projection of the number of households because they had decided to forecast the minimum demand. The following projections were made:

Actual and projected number of households,
1971 to 1986, Winnipeg and Winnipeg census metropolitan area

	1976 Population	1971 Population	Actual No. of households, 1971 Census
Winnipeg[1]	560,874	535,233	165,415
Winnipeg, C.M.A.[2]	578,217	549,808	169,920

[1] Based on the city boundaries established in January, 1972.
[2] Based on the C.M.A. definition used in the 1976 Census.

Projected number of households

	1976	1977	1978	1979	1980	1981
Winnipeg[1]	179,961	182,912	185,912	188,961	192,060	195,210
Winnipeg, C.M.A.[2]	184,863	187,895	190,976	194,108	197,292	200,527

	1982	1983	1984	1985	1986
Winnipeg	197,826	200,477	203,164	205,886	208,645
Winnipeg, C.M.A.	203,214	205,937	208,697	211,493	214,327

[1] Based on the city boundaries established in January, 1972.
[2] Based on the C.M.A. definition used in the 1976 Census.

Sources: 1971 and 1976 Censuses of Canada and "Household and Family Projections for Canada and the Provinces to 2001", Catalogue No. 91-517. The percentage rates of increase used, 1.70 for 1971-1976, 1.64 for 1976-1981, and 1.34 for 1981-1986 are those of "Projection 3" for Manitoba.

From the above projections it was a simple matter of subtraction to arrive at the annual increase in the number of households over the next 10 years. This was done only for the city of Winnipeg, a slightly smaller market area than the census metropolitan area (CMA).[1]

Projected increase in the number of households, city of Winnipeg, 1976-1986[2]

1976 to 1977	1977 to 1978	1978 to 1979	1979 to 1980	1980 to 1981	1981 to 1982	1982 to 1983	1983 to 1984	1984 to 1985	1985 to 1986
2,951	3,000	3,049	3,099	3,150	2,616	2,651	2,687	2,722	2,759

Next, Bob and the regional advisor needed information on the number of T.V. sets in households. These statistics were available on an annual basis for Canada and the provinces from the publication, "Household Facilities and Equipment". They extracted the following data on Manitoba for 1976:

Households with T.V. sets, Manitoba, May, 1976

T.V., all types, colour and black and white						
Total households	Households with one T.V. set	Households with 2 or more T.V. sets	Households without T.V.	Percent of households with one T.V. set	Percent of households with 2 or more T.V. sets	Percent of households without T.V.
314,000	207,000	93,000	14,000	66	30	4

Source: Household Facilities and Equipment, Catalogue No. 64-202. This household facilities and equipment survey was carried out in conjunction with the May 1976 Labour Force Survey of 36,000 households. There are varying degrees of statistical error in the results and the figures should be treated as estimates.

[1] Census metropolitan area (CMA): The main labour market area of an urbanized core having 100,000 or more population.

[2] As based on the projected number of households.

They now had enough information to project new demand for T.V. sets. New demand would consist of demand from new households being established as well as demand from existing households as the trend towards acquiring a second or even third set continued. However, for the sake of reducing the complexity of the task, they made a number of assumptions. They assumed that the percentages of households with one or more T.V. sets in Manitoba applied to the city of Winnipeg as well. Moreover, Bob and the regional advisor assumed that the 1976 percentages of T.V. sets per household would be constant over the next 10 years and would apply to new households. Finally, as they knew that the number of households with more than two T.V. sets was proportionately very small, they assumed that the percentage of households with two or more sets all had only two. These assumptions plus the fact that the basic data with which they were working were only estimates, meant that there would be a certain amount of error in their forecast. However, they felt fairly confident that their approximations would not overstate future new demand for T.V. sets.

Projected new demand for T.V. sets,
city of Winnipeg, 1976-1986[1]

1976 to 1977	1977 to 1978	1978 to 1979	1979 to 1980	1980 to 1981	1981 to 1982	1982 to 1983	1983 to 1984	1984 to 1985	1985 to 1986
3,719	3,780	3,841	3,904	3,969	3,297	3,341	3,385	3,430	3,476

[1] Based on the projected increase in number of households and on the percentage distribution of T.V. sets in households as of May, 1976. For example, from 1976 to 1977 the number of households increased by 2,951. Approximately 66%, or 1,948, of these households would acquire one T.V. set. An estimated 30% of new households would have two T.V. sets or more. This would approximate 1,771 (2,951 x .30 x 2) new T.V. sets. Hence, the projected new demand between 1976 and 1977 would be 1,948 + 1,771, or 3,719 sets.

The next step in the process was to estimate replacement demand. The May 1976 Household Facilities and Equipment Survey was used to approximate the number of television sets in the province. The figure Bob and the regional advisor arrived at was 393,000 sets. Now the problem was how to estimate the proportion of these sets located in the city of Winnipeg. The regional advisor suggested using the ratio of Winnipeg's population to that of the province, as determined by the 1976 Census. This resulted in an estimate of 215,783 sets for Winnipeg. Bob's knowledge of retailing now came into play. He knew that the life of a T.V. set was about 10 years. That meant that a tenth of the number in Winnipeg, or about 21,578 sets, would have to be replaced each year. This annual replacement added to new demand gave them the following projection of the total demand for T.V. sets in Winnipeg over the next 10 years.

Projected total demand for T.V. sets,
city of Winnipeg, 1976-1986

	1976 to 1977	1977 to 1978	1978 to 1979	1979 to 1980	1980 to 1981	1981 to 1982	1982 to 1983	1983 to 1984	1984 to 1985	1985 to 1986
New demand	3,719	3,780	3,841	3,904	3,969	3,297	3,341	3,385	3,430	3,476
Replacement Demand[1]	21,578	21,578	21,578	21,578	21,578	21,578	21,578	21,578	21,578	21,578
Total Demand	25,297	25,358	25,419	25,482	25,547	24,875	24,919	24,963	25,008	25,054

[1] As of May, 1976 there were approximately 393,000 T.V. sets in Manitoba (207,000 households with one and 93,000 households with two or more sets or about 186,000 sets). The city of Winnipeg has, according to 1976 Census, almost 55% of the provincial population. It is assumed that the number of T.V. sets in May, 1976 in Winnipeg vis-à-vis Manitoba was in the same ratio as population   560,874 : 215,783
    1,021,506 : 393,000
The life of a T.V. set is assumed to be 10 years. Therefore, one tenth of the existing stock of T.V. sets, 21,578, will have to be replaced each year. It is also assumed that the household distribution of T.V. sets prevailing in May, 1976 will continue over the next 10 years.

In the same way as he and the regional advisor had forecast the demand for television sets, Bob estimated the demand over the next few years for other major appliances such as washing machines, dryers, dishwashers, freezers, electric ranges and refrigerators. He took care to make allowances for the fact that new demand for certain products, such as electric ranges and refrigerators, was often met by the builder purchasing directly from the manufacturer.

With these market forecasts, Bob and ABC Ltd. had something to go on. Not only could they use the forecasts to help them decide whether or not to expand, but they could also use them in the future to calculate their approximate share of the market. Bob, therefore, decided that he would contact Statistics Canada again in the future to help update his forecasts.

A second thing which Bob wanted to do while he was at Statistics Canada was to investigate whether it would be worthwhile for the store to carry records and tapes. Bob knew that close to 90% of the business of ABC T.V. and Stereo Ltd. came from a specific geographic area of the city, namely the residential area surrounding the shopping centre. Bob wanted to find out, if possible, how large this specific market was in terms of expenditures on records and tapes before he advised the manager of the company's T.V. and stereo store.

Using the Census tract bulletins for Winnipeg from the 1971 Census of Canada, Bob and the regional advisor identified the market area as comprising census tracts 3 to 11 inclusive.[1] While this didn't correspond exactly to the area he was interested in, Bob thought that, for all practical purposes, it was a close enough approximation.

After they had identified the market area, the next piece of information they needed was average household income. The regional advisor explained to Bob that average household income could be used in conjunction with urban family expenditure data and the number of households in the area to estimate market size.

The Winnipeg 1971 Census tract bulletins showed that average household income for census tracts 3 to 11 ranged from a low of $7,592 to a high of $18,176. The combined average for the nine census tracts was calculated by multiplying the number of households by average household income in each tract and dividing the total income by the total number of households. This yielded an average household income for the market area of $11,826. But the

[1] Census tracts are small areas within major urban centres which follow easily recognized boundaries, contain between 2,500 and 8,000 people and are fairly homogeneous in terms of economic and social factors.

figure pertained to the year 1970 and they would have to update it to 1974, the most recent year for which urban family expenditure data were available.[1]

The regional advisor suggested to Bob that probably the best statistics to use to update the $11,826 would be those produced from the annual income survey and published in "Income Distributions by Size in Canada". After examining this publication, they extracted the following data and made the following calculations:

Average income, families and unattached individuals, metropolitan areas, Prairie Provinces, 1969-1974

Year	Income	
1969	$8,209	
1970[2]		$8,587
1971	$8,965	
1972	$9,588	42.2% increase between 1970 and 1974
1973	$10,271	
1974	$12,210 $12,210	

[1] Income statistics from the 1971 Census refer to income earned during 1970.
[2] The income survey prior to 1971 was conducted every two years. No survey, therefore, was carried out for 1970. An approximate figure is calculated for 1970 by taking the mid-point between 1969 and 1971.

They then increased the $11,826 by 42.2% and arrived at a figure of $16,817, representing the approximate average household income for the market area in 1974.

The next thing to do was to find out from the 1974 urban family expenditure survey the amount of money spent on records and tapes by those with income similar to the average household income of the market area. The regional advisor pointed out that the expenditure of families and unattached individuals combined would be a more appropriate statistic than family expenditure alone because the combined measure approximated household expenditure, and they were using household data. The income class of which the market area was part was $15,000 to $19,999. In 1974 this income group spent $28.10 on phonograph records and tapes. Multiplying this amount by the number of households (18,535) in the market area as reported in the 1971 Census, Bob estimated a total market size of $520,834 for 1974. The estimate made no allowance for any change in the number of households between 1971 and 1974. This did not worry Bob, however, because the area was an established one and any change in the number of households in three years would be small.

The last job Bob and the regional advisor wanted to do was to bring the estimate of market size up to date. For this purpose, they looked at the Consumer Price Index for Canada and noted that the index for "recording" had changed only slightly over the last two years. It had moved from 145.8 in July, 1974 to 147.4 in July, 1976, a modest increase of 1.1%. Applying this percentage increase to the estimate of market size, they calculated a figure of $526,563 for 1976.

The 1976 estimate of $526,563 represented a reasonable approximation of the market potential for records and tapes in the area served by ABC T.V. and Stereo Ltd. Obviously, if ABC carried records and tapes it could not hope to get all of the market. There was competition in the area and, of course, household expenditure on the commodities was not restricted to local stores. The question, then, that Bob was going to put to his store manager was this: How much of the half-million-dollar market for records and tapes would ABC be able to capture?

Case study 3.

Case study 3: Opening a new store

Arnold McMillan, president and owner of Family Footwear Ltd., a well-known Vancouver shoe store, was considering closing down one of the company's three downtown outlets and opening a new store in a fast-growing suburb of the city.

After a recent board of trade luncheon, he had taken the time to visit the board's library to see what he could find out about shoe store sales in British Columbia and Vancouver. One of the sources of information the librarian showed him was a Statistics Canada monthly publication entitled "Retail Trade", on which the librarian told him many board members relied to follow trends in retail sales. From "Retail Trade", Arnold selected the following information:

Retail trade, family shoe stores
British Columbia and Vancouver

	B.C. ($000)	Percent change	Metropolitan Vancouver[1] ($000)	Percent change
1972	28,519			
1973	32,250	13.1		
1974	35,372	9.7	15,739	
1975	39,487	11.6	16,539	5.3
1976	40,073	1.5	15,921	-3.7

[1]Prior to 1974 the retail trade survey did not yield reliable estimates for Vancouver.

When Arnold returned to work, he compared his sales figures with the statistics he had got from "Retail Trade". His sales in 1976 had remained at about their 1975 level but from contacts with his associates, he surmised that 1976 had not been a particularly good year for the industry in general. He then looked at the change between 1974 and 1975. His three stores had an average increase in sales of 6% between 1974 and 1975, a figure slightly above the 5% recorded for the metro area, but only half of that recorded for the province. However, two of his stores had increases of 7% and 8% respectively, although sales at the third store rose by only 3%.

Arnold also looked at his increase in sales for the period 1972 to 1976 and, as he already suspected, it was lower than the 41% growth he calculated from the publication for British Columbia over the same period. Even if he omitted sales of his weakest store from the calculation his sales increase did not match that of the province.

The information Arnold McMillan had gleaned from "Retail Trade" was not exhaustive, but it was consistent with what he knew and what he had suspected. Two of his stores were doing relatively well compared to other stores in the metro area, although considering price increases between 1974 and 1975 there was probably very little, if any, real growth in sales. One of his stores was doing very badly and this was the store which had shown the poorest profit picture over the last several years. The explanation was apparent. It was in a part of downtown where retail sales in general had been stagnating for some time. Arnold was coming to the conclusion that he should close down the one store and find a better location.

Arnold thought that a move to the suburbs would be in order. He reasoned that, while family shoe sales rose by 5% in the metro area as a whole between 1974 and 75, the increase in the suburbs alone was, in all likelihood, greater than the increase for the city proper. Indeed an associate of his had told him not too long before that sales in his suburban shoe store had been rising at an annual rate of roughly 15% for the past four years. The problem that now confronted Arnold was where to begin his investigation to select a new location.

The librarian at the board of trade had suggested to him that he might visit the local User Advisory Services office of Statistics Canada for further assistance. Arnold telephoned Statistics

Canada and was invited to come down. When he got there he explained what he was doing and what sort of information he was looking for. One of the basic pieces of information he wanted was population statistics for a selected group of municipalities in the Vancouver metropolitan area. He wanted, in particular, to see how the various suburban municipalities had grown over the years. The inquiries officer put together the following table for him:

Population: Selected municipalities of the Vancouver C.M.A.

	1966 Census	1971 Census	1976 Census	% change 1966 to 1976
Coquitlam (municipality)	40,916	53,230	55,464	35.6
Delta (municipality)	20,664	45,860	64,492	212.1
Langley (municipality)	15,767	21,936	36,659	132.5
Maple Ridge (municipality)	19,287	24,476	29,462	52.8
Port Coquitlam (city)	11,121	19,560	23,926	115.1
Richmond (municipality)	50,460	62,121	80,034	58.6
Surrey (municipality)	81,826	98,601	116,497	42.4
All others	693,050	756,568	759,814	9.6
Vancouver census metropolitan area	933,091	1,082,352	1,166,348	25.0

Sources: Population: Cities, Towns, Villages, CMAs and CAs, Catalogue No. 92-708
Population: Census Divisions and Subdivisions—Western Provinces and Territories, Catalogue No. 92-805

This information was exactly what Arnold wanted. It showed him two things: the approximate growth of the various municipalities between 1966 and 1976 and their comparative size.

Next Arnold asked the inquiries officer if there were any statistics on incomes in those communities. He wanted to know which municipalities had higher than average incomes. Also he wanted to know something about total income in each municipality. The inquiries officer explained that, at the level of geographic detail Arnold wanted, the only source was the 1971 Census. From the Vancouver Census tract bulletin, Series B, Catalogue No. 95-758, the following information was extracted:

Household income, selected municipalities
of the Vancouver C.M.A., 1971 Census[1]

	Average income per household $	Number of households	Total household income (Col. 1 x Col. 2) $
Coquitlam (municipality)	10,987	13,305	146,182,035
Delta (municipality)	11,061	12,070	133,506,270
Langley (municipality)	8,650	6,360	55,014,000
Maple Ridge (municipality)	8,320	7,425	61,776,000
Port Coquitlam (city)	10,532	5,225	55,029,700
Richmond (municipality)	10,769	16,960	182,642,240
Surrey (municipality)	9,166	26,975	247,252,850
Vancouver Census Metropolitan Area	9,931	346,215	3,428,261,165

[1]Income statistics from the 1971 Census refer to income received during 1970.
Source: Vancouver Census tract bulletin, Series B, Catalogue No. 95-758

While these income statistics pertained to 1970, they were still very useful to Arnold. First of all, they provided a comparison between municipalities and, as the inquiries officer explained, even though the relationship of average income between municipalities was subject to change, it would, in all likelihood, change very slowly. Hence Arnold felt that he was probably safe in assuming that the comparison was still valid. Secondly, he knew that it would be a fairly easy task to update total household incomes. He really only needed estimates. He discussed this with the inquiries officer and found that a current statistical series, ''Income Distribution by Size in Canada'', Catalogue No. 13-207, could be used for updating purposes. And, thirdly, current estimates of total household incomes together with 1976 population figures and whatever information he could find on the number and location of shoe stores would allow him to calculate a couple of important ratios—the number of people and income per shoe store for each municipality. These would give him two indicators of the intensity of competition.

Arnold also thought that he should investigate market areas. Some of the municipalities adjoined one another and he wanted to see if he could find answers, for example, to such questions as: How much business do Richmond merchants get from the neighbouring municipality of Delta? Statistics Canada couldn't assist him in answering these questions, but the inquiries officer suggested that perhaps the local chambers of commerce would be able to help him. Although Arnold knew that the local chambers probably didn't have much hard information on the extent and composition of their respective market areas, he felt that if he contacted them and also talked with a few of the members he could possibly get some good indications of where their customers came from.

Before leaving the local office of Statistics Canada, there was one more piece of information that Arnold wished to get which he knew would be useful to him in reaching a decision on where to locate. He was interested in knowing the number of children in each of the selected municipalities. Family Footwear Ltd. carried a large stock of children's shoes in its stores and Arnold was thinking of increasing the stock in the new one. He knew that children keep needing new shoes as they grow, and also that they tend to wear out their shoes faster than adults because of their active play. Arnold, therefore, wanted to know the number of children 14 or 15 years old and younger in each of the municipalities. The inquiries officer gave Arnold the following information:

Number of children 14 years of age and under by
five-year age groups, selected municipalities
of the Vancouver C.M.A., 1971 Census

	0-4		5-9		10-14	
	Number	% of total population	Number	% of total population	Number	% of total population
Coquitlam (municipality)	4,840	9.1	6,355	12.0	6,250	11.8
Delta (municipality)	5,365	11.7	5,920	12.9	5,225	11.4
Langley (municipality)	1,960	8.9	2,430	11.1	2,535	11.6
Maple Ridge (municipality)	2,050	8.4	2,450	10.0	2,720	11.1
Port Coquitlam (city)	2,410	12.3	2,620	13.4	2,195	11.2
Richmond (municipality)	5,340	8.6	7,040	11.3	7,490	12.1
Surrey (municipality)	8,770	8.9	11,090	11.2	11,840	12.0
All others	49,525	6.5	56,670	7.5	62,815	8.3
Vancouver census metro-politan area	79,245	7.3	94,575	8.8	101,070	9.3

Source: Population Age Groups, 1971 Census, Catalogue No. 92-715

From the above information Arnold could make some ready comparisons between municipalities for 1971, both in terms of the absolute size by five-year age groups of the 14-and-under population and in terms of the relative percentage of the under-14 population again by five-year groups, in each community. This information could be updated from the 1976 census and would allow Arnold to look at the growth in the number of children in these areas.

Arnold left Statistics Canada after spending only an hour of his time at the User Advisory Services office looking at various catalogues in the library and talking with the inquiries officer. He had not only obtained statistics which would help him decide where to open his new store, but he had discovered a valuable source of future information.

Case study 4.

Case study 4: A retailer assesses his financial situation

Marcel Izard was owner-manager of Capital Men's Wear Ltd., an Ottawa men's clothing store. Recently Marcel had felt pressure from his suppliers to pay his accounts faster. He was worried about this and took the matter up with his banker. In the past, when he had had a cash problem, his banker had extended his credit. This time, however, his banker wanted Marcel to have his financial statements analyzed by an accountant before deciding on a loan. It was only eight months ago that the bank had increased Capital's credit by $5,000, and the bank manager thought that Marcel should find out if anything was wrong.

Capital's accounts were prepared by a bookkeeping firm. Marcel had always been pleased with the service he got from the firm, but it wasn't really capable of analyzing his financial statements. It was Marcel's responsibility to appraise his own operations or to seek profes-sional help. Marcel made an appointment with one of the chartered accountants recommended by the bank manager. When he went to see the accountant, he brought with him his balance sheets and income statements.

The chartered accountant told Marcel during their meeting that it would take him a few days to analyze Capital's accounts. Not only did the accountant want to calculate some ratios for Capital Men's Wear, but he wanted also to compare them with statistics on the men's retail clothing business in general. This would entail some digging for information.

One of the places the accountant contacted in his search for information was the Central Inquiries Service of Statistics Canada in Ottawa. The inquiries officer recommended that he have a look at "Corporation Financial Statistics", Catalogue No. 61-207.

Capital Men's Wear Ltd
Balance Sheet

| | As of December 31st | |
	1973 $000	1974 $000
Assets		
Current assets		
Cash	40	30
Prepaid expenses	6	5
Accounts receivable	24	27
Inventories	70	75
Total current assets	140	137
Building, less accumulated depreciation	70	67
Store equipment, net of accumulated depreciation	20	18
Total assets	230	222
Liability and shareholder's equity		
Current liabilities		
Accounts payable	97	66
Accrued liabilities	5	7
Income taxes payable	3	4
Total current liabilities	105	77
Bank loan payable	25	30
	130	107
Shareholder's equity	100	115
Total liabilites	230	222

Capital Men's Wear Ltd.
Income statement

	Year Ended Dec. 31st	
	1973 $000	1974 $000
Sales revenues	303	339
Cost of goods sold	218	244
Gross margin on sales	85	95
Salaries and wages	47	53
Building operation and maintenance	15	17
Depreciation	5	5
Other expenses	5	4
	72	79
Net income before income tax	13	16
Income taxes payable	3	4
Net income after tax	10	12

He could obtain that publication either by visiting Statistics Canada or by going to the closest library which received Statistics Canada publications. The inquiries officer told him that "Corporation Financial Statistics" contained detailed balance-sheet and income-statement statistics for 182 industries at the Canada level, one of which was men's retail clothing stores. In addition, the publication contained an appendix with selected corporation ratios.

The accountant also asked if there was similar information available for Ontario. The inquiries officer referred him to a publication entitled "Operating Results: Men's Retail Clothing Stores 1974", Catalogue No. 63-603. This was one of a new series of occasional publications based on taxation data, for small business.

From "Corporation Financial Statistics" the accountant calculated the following financial indicators for men's retail clothing stores in Canada:

Income statement	1973	1974
Gross margin on product sales $\left(\dfrac{\text{gross profits}}{\text{product sales}}\right)$	32.3%	32.6%
Net income to product sales $\left(\dfrac{\text{net profit after tax}}{\text{product sales}}\right)$	3.3%	3.4%
Income tax rate $\left(\dfrac{\text{current provision for income tax}}{\text{net profit before tax}}\right)$	36.6%	38.6%
Percentage increase in product sales	10.0%	7.9%
Percentage increase in net profit after taxes	32.2%	11.2%

Balance sheet		
Current ratio $\left(\dfrac{\text{current assets}}{\text{current liabilities}}\right)$	1.6	1.7
Quick ratio $\left(\dfrac{\text{cash, receivables, marketable securities}}{\text{current liabilities}}\right)$	45.9	47.9
Shareholder's equity to total assets $\left(\dfrac{\text{total equity}}{\text{total assets}}\right)$	47.7%	45.5%

Interstatement ratios	1973	1974
Number of days sales in receivables $\left(\dfrac{\text{accounts receivable}}{\text{product sales}} \times 365\right)$	25.8 days	26.4 days
Inventory turnover $\left(\dfrac{\text{cost of sales}}{\text{inventory}}\right)$	2.7 times	2.5 times
Asset turnover $\left(\dfrac{\text{product sales}}{\text{total assets}}\right)$	1.7 times	1.6 times
Return on shareholder's equity $\left(\dfrac{\text{net profit after taxes}}{\text{total equity}}\right)$	11.8%	12.4%

These industry statistics would serve as standards of comparison for Capital Men's Wear.

Next, he proceeded to calculate the same set of financial indicators for Capital.

Capital Men's Wear Ltd.

Income statement	1973	1974
Gross margin on product sales	28.1%	28.0%
Net income to product sales	3.3%	3.5%
Income tax rate	23.1%	25.0%
Percentage increase in product sales	10.5%	11.9%
Percentage increase in net profit after taxes	25.0%	20.0%
Balance sheet		
Current ratio	1.3	1.8
Quick ratio	60.9	74.0
Shareholder's equity to total assets	43.5%	51.8%

Interstatement ratios		
Number of days sales in receivables	29.8 days	29.1 days
Inventory turnover	3.1 times	3.3 times
Asset turnover	1.3 times	1.5 times
Return on shareholder's equity	10.0%	10.4%

After a couple of days, the chartered accountant met again with Marcel. It was true, as Marcel had pointed out at their previous meeting, that sales were good. Capital's sales had increased by 10.5% between 1972 and 1973 and by 11.9% between 1973 and 1974, whereas industry sales over the same period had increased by only 10% and 7.9% respectively. As a consequence, it was hard for Marcel to see why he should be having difficulty paying his suppliers. The accountant pointed out, however, that Capital's assets were increasingly being tied up in the time it was taking him to collect his receivables and in the size of his inventory. It was taking Capital roughly 29 days on the average to collect its accounts. The industry, on the other hand, took about 26 days. The industry was turning its receivables into cash at a faster rate. While 26 days were acceptable, or at least explainable, for the industry, 29 days were unacceptable for the company. Capital Men's Wear, like most small, independent, retail businesses, no longer made its own credit arrangements, but relied instead on national credit cards. There was, therefore, no valid reason for taking so long to convert the company's receivables into cash. Marcel admitted to the accountant that he was not always regular about sending his charge slips in, and that he would often let them accumulate till the end of the month when the bookkeeper would take care of them. The accountant told him that he should send them in at least every five days, but preferably every day.

Capital's other problem was a little more difficult to analyze. Its inventory had increased from $70,000 in 1973 to $75,000 in 1974, but this did not alarm Marcel for he viewed the increase as the effect of inflation upon the cost of his purchases. Moreover, as he now learned, the inventory turnover ratios for the company, 3.1 and 3.3 were considerably better than those for the industry—2.7 and 2.5. However, the accountant was quick to point out that not all of Capital's increase in inventory could be explained by inflation, and that, furthermore, the industry was operating on a much better gross margin than the

company. The better industry gross margin ratio was apparent in the industry return on investment. Return on shareholders' equity for the retail men's clothing industry in 1973 and 1974 was 11.8% and 12.4% respectively, compared with corresponding figures of 10.0% and 10.4% for Capital. The accountant explained to Marcel that either the company's gross margin would have to be improved or inventory turnover increased, or both, in order to increase its return on investment. He couldn't take on any more debt.

The accountant spelled out some specific actions that he wanted Marcel to take. First, to examine the range of goods in his store; it seemed quite likely that Capital did not carry enough higher-markup items. Second, to appraise his pricing policy on existing stock; he was perhaps pricing some goods lower than he needed to. Third, to make a determined effort to reduce the size of his inventory. Fourth, to be more selective in his buying. And fifth, to increase his turnover by more aggressive and sustained sales promotion. Until now the only advertising Capital had done was in connection with its spring and fall sales. The accountant thought that a regular weekly ad in the Friday newspapers might be worth consideration.

If through the above efforts Capital's return on investment did not improve, then Marcel would have to consider alternative arrangements. While the company's asset turnover ratio was in line, at least in 1974, with that of the industry, the accountant still felt that it was too low. Capital was getting only $1.53 of sales for each dollar of assets. The accountant explained that this raised the question as to whether or not optimum use was being made of the building he owned. Perhaps it would be more profitable for Marcel to sell his premises, find another investment for the money, and rent a location to carry on his men's wear business.

The last thing the accountant went over with Marcel was the information he had obtained from the men's clothing store study.

Operating results as a percent of net sales,
1974 men's clothing stores,
unincorporated for stores with sales between
$230,000—$999,999, Ontario

Items		Mean	Median	Number of firms reporting
Net sales	$'000	332.272	303,789	8
Opening inventory	%	20.8	22.4	8
Purchases	%	72.3	67.4	8
Closing inventory	%	26.5	22.4	8
Cost of goods sold	%	66.6	66.8	8
Gross profit	%	33.5	33.4	8
Expenses:				
Employees' salaries and wages	%	9.2	8.8	8
Employees' benefits	%	0.3	0.4	7
Property taxes	%	x	x	2
Rent	%	3.0	2.4	7
Business taxes, permits and licences	%	0.2	0.2	8
Insurance	%	0.4	0.4	7
Interest, exchange, and bank charges	%	0.8	0.6	5
Depreciation	%	0.8	0.7	8
Advertising	%	1.2	0.9	8
Repairs and maintenance	%	0.6	0.6	6
Legal and auditing fees	%	0.3	0.3	6
Office and store supplies	%	1.1	1.1	8
Telephone, heat, light, and water	%	0.7	0.7	8
Delivery, express, and freight	%	0.5	0.5	5
Travel and entertainment	%	0.7	0.7	4
All other expenses	%	1.0	0.5	7
Total, all expenses	%	19.4	19.9	8
Net profit	%	14.0	14.2	8

x As only 2 firms are reporting, this information is confidential to meet the secrecy requirements of the Statistics Act.

Even though the statistics were for unincorporated business, the accountant felt that that did not invalidate their usefulness. They were specific to Ontario and provided information for a size class of store with average annual sales very close to Capital's annual sales. The statistics supported what the accountant had already explained to Marcel. The gross profit margin was considerably above that of Capital Men's Wear. Indeed it was even higher than that for the incorporated part of the industry. Judging from the number of firms reporting property taxes, it appeared that it was not typical for clothing stores of this size to have their own building. And finally, net profit seemed very high, although a direct comparison here would be misleading as these were unincorporated businesses.

The accountant suggested that Marcel take the operating statistics with him and make comparison with the figures for Capital on each expense item. For example, only about half the firms in the group reported interest, exchange and bank charges. The average expenses for this item was 0.8% of net sales. Capital Men's Wear had a fairly large bank loan of $30,000 and the accountant was sure Marcel would find the charges for the loan would exceed 0.8%.

Marcel left the chartered accountant's office feeling he had received the professional advice he needed. He had also learned an important lesson with regard to the use and value of statistical information.

Case study 5.

Case study 5: Reaching the right market

When Léo Desmarteaux finished his business studies at university, he decided to go back to work at Champlain's, the family hardware, paint and building supply store in Québec City. This delighted his father because Léo would be the third generation to carry on in the business.

One of the first tasks Léo undertook after his return was to find out what he could do about Champlain's market. Léo's father had told him that for some time the source of the company's business had been shifting from the city to those municipalities adjoining the city to the north. From a sample of sales records over the past 10 years, Léo was able to determine the geographic shift in the market. What his father had told him was borne out by his examination of sales records. Ten years ago over 50% of Champlain's business had come from within the city. Now the situation had been reversed—over 50% of sales came from outside the city.

With a pretty clear picture of the geographic extent of the company's market, Léo went to the local library to do a little research. Léo had studied market research as a student, and realized that one extremely valuable source of data was the Census of Canada. From the census data and the associated maps he put together a fairly comprehensive profile of the market area. He gathered information on the structure of the population, incomes, number and size of households, dwelling types, occupational composition of the labour force, employment by industry, and on other items. Léo knew that it would not be long before he could put this information to good use.

The first opportunity to use his market profile arose in connection with the distribution of Champlain's annual catalogue. Over the last few years it had become increasingly expensive to have the catalogues produced, and the practice of handing them out until they were gone to every customer who came into the store would have to be discontinued. The company's budget allowed for the production of 10,000 catalogues and Léo was now given the job of seeing that they were distributed in an effective manner. The following information, taken from the material which he had put together at the library, was used to distribute the catalogues:

Selected census statistics, 1971 and 1976, Champlain's market area

Place	Population			Number of households 1971	Average household income 1970[2] $	Occupied dwellings: % owner-occupied 1971	No. of dwellings with owned vacation home 1971
	1976[1]	1971	% Change 1971 to 1976				
Québec (city) (Part of) Census tracts[3]	71,146	63,175	12.6	16,290	9,434	41.8	1,040
26	6,519	7,305	−10.8	2,190	8,405	22.3	145
33	9,330	9,420	−1.0	2,905	9,858	24.8	155
34	5,797	6,410	−9.6	1,865	9,193	23.5	170
38	8,595	8,545	0.6	2,340	9,452	24.0	150
39	11,939	8,820	35.4	2,035	9,395	66.5	155
40	11,427	11,040	3.5	2,340	10,113	63.2	160
41	17,539	11,635	50.7	2,615	9,402	67.5	105
Vanier (town)	10,683	9,720	9.9	2,460	8,173	31.3	215
Charlesbourg-est (mun.)	2,286	1,485	53.9	325	8,016	62.2	20
Giffard (city) Census tracts	14,106	13,130	7.4	3,515	9,449	34.0	280
310	3,286	3,520	−6.6	1,040	8,917	29.8	85
311	10,820	9,610	12.6	2,475	9,672	35.8	195

Selected census statistics, 1971 and 1976, Champlain's market area (continued)

| Place | Population | | | Number of house- holds 1971 | Average household income 1970[2] $ | Occupied dwellings: % owner- occupied 1971 | No. of dwellings with owned vacation home 1971 |
	1976[1]	1971	% Change 1971 to 1976				
Charlesbourg (city) Census tracts[3]	37,758	33,440	12.9	8,370	11,091	59.9	640
270	10,503	9,655	8.8	2,705	9,344	32.0	165
271	10,194	9,655	5.6	2,410	11,841	66.8	200
272	2,120	2,110	0.5	525	10,053	58.1	45
273	14,941	12,020	24.3	2,730	12,340	82.1	230
Orsainville (town)	16,402	12,520	31.0	2,930	9,598	72.2	140
Charlesbourg— Ouest (mun.)	2,382	1,745	36.5	435	8,951	62.1	15
St-Émile (village)	4,205	2,645	59.0	640	8,186	70.3	15
Loretteville (city)	14,767	11,645	26.8	2,830	10,296	66.1	180
Ancienne- Lorette (town)	11,694	8,305	40.8	2,040	9,853	71.9	125
TOTAL	185,429	157,810	17.5	39,835	9,763	50.7	2,680

[1]Total population figures are the first statistics produced from a census. They may precede other population figures (e.g. population by age groups) and other census statistics by as much as a year. Total population figures were the only data available from the 1976 Census at the time this study was written. Data pertain to the 1971 Census boundaries.

[2]Income statistics from the 1971 Census pertain to the year 1970.

[3]Census tracts are small statistical areas within major urban centres (Census Metropolitan Areas) which follow easily recognized boundaries, contain between 2,500 and 8,000 people and are fairly homogeneous in terms of economic and social factors.

[4]Main sources: Québec Census tract bulletins A and B, 1971 Census, Statistics Canada Catalogue Nos. 95-705 and 95-735, and 1976 Census, No. 92-806.

Specifically, the catalogues were distributed in those parts of Champlain's market where household income was above the average of $9,763, where home ownership was over 50%, and where the percentage of households with vacation homes and the number of vacation homes were above the average for the market area. The use of these criteria resulted in distribution being concentrated in census tracts 39 and 40 in Québec, census tracts 271, 272 and 273 in Charlesbourg, Loretteville and Ancienne Lorette. About 2,000 catalogues were kept at the store to be selectively handed out over the next few months.

Léo's father liked the thinking which Léo had used as the basis for distributing the catalogues. One thing that worried him, though, was the fact that the household income and dwelling statistics were for 1971, and that they might be too old to

be of much value. Léo explained that for some purposes they were too old, but for purposes of making relative comparisons between parts of the market they were usable, since relative positions, as opposed to absolute values, generally change quite slowly. Hence, Léo told his father that he thought that they were probably correct in assuming that those parts of the market with above-average income and higher-than-average home and vacation-home ownership, as determined by the 1971 Census, were still, in 1976, in the same above-average position.

Léo's father also liked the choice of criteria which Léo had made in order to distribute the catalogues. However, he felt that income and apparent need to purchase the commodities sold by Champlain's were not the only important factors. He told Léo that such things as the type of owned dwelling (e.g., single house vis-à-vis an apartment), the number of rooms in the dwelling, the age of the dwelling, the length of residency of occupants, etc., were examples of other factors which would have a bearing on sales. Léo agreed with his father and told him that there were probably a great many factors which could have been considered. Next time they distributed the catalogues they could examine other criteria as well, provided the task was not made too complex.

This conversation with his father had given Léo another idea. He noticed when he was putting together the market profile that data were available on the period of construction of occupied dwellings. The B Census tract bulletin showed the number of occupied dwellings built before 1946 and after 1960. While this breakdown was too broad for what Léo had in mind, it suggested to him that data were probably available by year of construction or by a smaller period breakdown. Léo was thinking of using period-of-construction data cross-classified with type-of-structure statistics from the 1971 Census in order to identify a target population to receive a flier in connection with Champlain's paint sale. And, because Champlain's business had been moving out of the city, Léo decided that in addition to the market area he would request data for Beauport, Villeneuve, Ste-Thérèse-de-Lisieux, St-Dunstan-du-Lac-Beauport, Notre-Dame-des-Laurentides, Lac-St-Charles, St-Gabriel-de-Valcartier, Val-St-Michel, Belair and Ste-Foy.

Léo wrote to Statistics Canada in Montreal outlining what he was doing and specifying the data he wanted. His letter was acknowledged and routed by the statistical reference centre in Montreal to the Census Data Dissemination Division, that part of the Census operation at Statistics Canada, Ottawa, which produces specially designed customer tabulations.

After appraising the feasibility of producing the tabulations, Census Data Dissemination Division wrote Léo explaining that it was not possible to release the exact data he had requested. There were not enough observations by type of structure in some census tracts to prevent the possibility of disclosing confidential information. The special inquiries officer suggested an alternate tabulation. It would be feasible to tabulate owned and rented dwellings by period of construction and average household income cross-classified by length of residency of occupants. From his discussion with his father, Léo knew that length of residency was an important factor to consider. In the first couple of years after moving into a home, people tend to fix them up the way they want them. This, of course, often results in purchases of hardware supplies, paint and building materials. Also, after living in a place for a period of time people frequently decide to renovate their homes. Consequently, Léo wrote back to Census Data Dissemination and told them to go ahead and produce the substitute tabulation. The amount charged for the special tabulation was a modest $30.00, which was mainly the cost of the computer time to have the data extracted.[1]

Léo received his special tabulation a few weeks later. The tabulation showed the number of dwellings by tenure (owner-occupied, rented and owned and rented), by period of construction (built in 1971, 1970 and 1969; between 1966-68, 1961-65, 1951-60; and before 1951), average household income and length of residency of occupants (residence less than one year, one to two years, three to five years, over five years) for the geographic areas he had specified. From the special tabulation, Léo constructed a series of tables such as the following:

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[1] The cost of special tabulations depends on the size of the geographic area and the number of cross-tabulations requested.

OWNER-OCCUPIED DWELLINGS	Charlesbourg						Orsainville	
	Census tract 271		Census tract 272		Census tract 273			
	Residence 1 to 2 years	Residence 3 to 5 years	Residence 1 to 2 years	Residence 3 to 5 years	Residence 1 to 2 years	Residence 3 to 5 years	Residence 1 to 2 years	Residence 3 to 5 years
Built in 1970 —Number	20				80		65	
—Ave. hshld. income	$14,408				$14,861		$8.928	
Built in 1969 —Number	90				165		130	
—Ave. hshld. income	$13,995				$12,676		$10,842	
Built in 1961-65 —Number	40	50		10	40	85	45	105
—Ave. hshld. income	$14,557	$14,897		$17,143	$16,147	$13,546	$12,019	$10,992

	Charlesbourg-Ouest		St-Emile		Loretteville		Ancienne-Lorette	
	Residence 1 to 2 years	Residence 3 to 5 years	Residence 1 to 2 years	Residence 3 to 5 years	Residence 1 to 2 years	Residence 3 to 5 years	Residence 1 to 2 years	Residence 3 to 5 years
Built in 1970 —Number	15		15		50		35	
—Ave. hshld. income	$ 7,980		$11,725		$10,940		$11,837	
Built in 1969 —Number	10		25		75		115	
—Ave. hshld. income	$12,983		$10,013		$13,043		$11,656	
Built in 1961-65 —Number			10			35	25	55
—Ave. hshld. income			$ 8,934			$12,815	$ 9,197	$10,699

Note: The numbers of dwellings all have the numeral 5 or 0 as the last digit due to a statistical procedure known as Random Rounding. This technique is employed to protect the confidentiality of individual respondents.

Léo concentrated on the above statistics for several reasons. Firstly, it seemed obvious that owners were more likely than renters to paint the places they lived in. Rental accommodation, particularly apartment buildings, was to a large extent painted commercially. Secondly, Léo's father had told him that, in his experience, the frequency for painting the exterior of houses in

the Québec area was once every six to seven years. Hence, in 1976, those dwellings built in 1969 and 1970 would be ready for their first re-painting and those built between 1961-65 would require their second re-painting. (For purposes of indicating to which areas to send out the flier, Léo did not consider dwellings which might have been in need of a third re-painting). Thirdly, as far as residency was concerned, by 1976 the majority of owners who had resided in their homes from one to five years when the 1971 Census was taken would now have lived in their homes from seven to 12 years. From what Léo was able to find out, somewhere between 85 and 90% of all home owners painted their dwellings, or had them painted, at least once in the first 10 years they lived in them. And finally, Léo concluded that higher incomes were important and therefore he would use income levels as another criterion. The question of the importance of income levels was a little difficult to decide. Among lower-income owners there was obviously more incentive to do one's own painting while higher-income owners could afford to hire a contractor to paint their homes. Nevertheless, Léo thought that the ability to pay was important and that if incomes were too low this would be a barrier—or at least that low-income

owners would probably paint their places less frequently. Moreover, lower household income was probably associated with smaller dwellings. Obviously, smaller dwellings would require less paint than larger ones, particularly in the interior. Thus he would select those census tracts and communities with above-average household income.

On the basis of these factors, Léo made his choice as to which areas of Champlain's market and potential market he would have the flier advertising the paint sale delivered. The selective use of available statistics had cut down on Champlain's advertising costs, and Léo fully expected that his efforts would also yield an increase in sales. He would evaluate the paint sale by comparison with past sales, and from the point of view of determining how much business came from those areas outside of Champlain's established market where the flier was distributed. Léo wanted to demonstrate to his father the value of the limited amount of market research which he had undertaken. He firmly believed that Champlain's business would be substantially improved in the future if the store was to develop the practice of regularly doing market research and evaluation.

And that's not all...

And that's not all ...

The case studies give an idea of the type of information available from Statistics Canada. But, they give only an idea. It is impossible to describe in this booklet all the publications and unpublished data which are available but it is important that readers have some appreciation for the scope and depth of this information.

For example, information on retail sales are mentioned in two case studies. However, this is only a small part of the body of data produced by the Merchandising and Services Division of Statistics Canada. Not only is there additional information available on retail trade—department-store sales and stocks, and chain-store sales are just two such areas—but there is also information on wholesaling as well as service industries. Even though statistics from the Census of Population are used in four of the five case studies, these have not exhausted the range of information produced from that survey. The Census, as it is commonly called, is by far the largest survey carried out by Statistics Canada, and it is an extremely important survey for the retailer as it is the main source, and in many instances the only source, of small-area data. The Census provides information on a wide variety of social and economic characteristics of the Canadian population. In addition, it provides a great deal of information on the stock of housing in the country.

One important source of information not mentioned in the case studies is Census of Manufactures, which is published annually in over 140 industry reports. Another is the publications on Canada's external trade. They give very detailed information on the quantity and value of commodities imported from, and exported to, all the countries in the world. Still another valuable source not mentioned in the case studies is ''National Income and Expenditure Accounts,'' Catalogue No. 13-001. This report, published each quarter, provides measures of the economy's overall performance, including personal expenditures on consumer goods and services. In addition, Statistics Canada publishes data on employment, unemployment, earnings, construction, transportation, energy, capital investment, and many other subjects.

Although Statistics Canada does not normally publish forecasts, there are a few exceptions to this rule. Chief among them are the population projections for Canada and the provinces. The current projections (they are revised after each census) go to the year 2001 and provide estimates of the population by sex and five-year age groups. As illustrated in one of the case studies, Statistics Canada also produces household and family projections. And, from time to time, Statistics Canada has forecast, either on its own or in conjunction with others, educational enrolments.

Most of the information requested by the users of statistics is available in the over 1,000 publications produced by Statistics Canada each year. If the information you want is not published, this does not mean that it is not available. It might be part of the body of unpublished material which is available on request. In addition to already prepared, unpublished information, it is possible for Statistics Canada to prepare from the data files special tabulations which are more closely tailored to a user's needs. As shown in one of the case studies, the Census is an area where special tabulations are undertaken for a modest fee. External trade is another area.

Finding and using statistics

Finding and using statistics

Where to get statistics and who to ask for help

Finding one's way through the more than 1,000 Statistics Canada publications may, at first, seem a formidable task but in fact is quite straightforward.

Firstly, there is a free "Statistics Canada Catalogue" which lists and describes all Statistics Canada publications, as well as unpublished information, and has a subject index. For people who want to be completely up to date there is "Infomat", a weekly publication which is also available free and which lists the publications issued the previous week and features some of the highlights.

But the golden rule is: If in doubt—ask!

Statistics Canada's User Advisory Services has reference centres in nine cities across Canada from St. John's to Vancouver. Each has a library of all Statistics Canada publications and a knowledgeable inquiries staff who answer a total of 150,000 inquiries a year and provide information on the sources of information and the meaning and uses of data. In each office there are one or more regional advisors. It is their job to help people with complex data problems and, through visits, talks and meetings with associations, business groups, etc., to encourage the use of statistics.

The addresses of these offices are given on page 53 and, on page 54 , there is a list of 42 libraries across Canada which receive all Statistics Canada publications. Many other public libraries carry a selection of the major publications.

The purchase of individual copies of Statistics Canada publications can be arranged through the regional offices or by writing to:

Publications Distribution
Statistics Canada,
Room 1405, Statistics Canada Building,
Tunney's Pasture,
Ottawa, Ontario. K1A 0T6

Alternatively, publications can be purchased through bookstores which act as agents for the Government of Canada.

Understanding the jargon

Every occupational group has its own language or jargon, and statisticians are no exception. However, there is no need for this to deter people from using the statistics. The following is a glossary of some of the unfamiliar words most frequently used in Statistics Canada publications. Users who require an explanation of other terms should consult the nearest User Advisory Services office.

Means and medians

These are both ways of expressing a series of numbers by a single number. The *mean* most frequently referred to in Statistics Canada's publications is the arithmetic mean. It is what most people call the "average" and is calculated by adding up the numbers in the series and dividing the total by however many numbers there are. For example, if five children are aged 3, 4, 5, 8 and 10, their mean age is:

$$\frac{3 + 4 + 5 + 8 + 10}{5} = 6$$

The *median* is the value of the middle number of a series ranked in order of size. For example, given the ages of five children as 5, 4, 8, 3 and 10, to find the median age the series would first have to be rearranged in order of size, i.e., 3, 4, 5, 8, 10, and the value of the middle number, i.e., 5 would be the median age.

Time series

Information collected or recorded at regular intervals through time—weekly, monthly or annually—is called a *time series* or a *series*. Statisticians speak of a series of numbers employed, a series of annual production, a series of monthly retail trade. A series may be made up of actual numbers (e.g., population, unemployed, job vacancies) or dollar values (shipments, inventories, purchases). It may also be in the form of an index.

Index numbers and indexes

Index numbers are a statistician's way of expressing the difference between two measurements by designating one number as the "base", giving it the value 100 and then expressing the second number as a percentage of the first. For example, if the population of a town increased from 20,000 in 1972 to 21,000 in 1977, the population in 1977 was 105% of the population in 1972. Therefore, on a 1972 base, the population index for the town was 105 in 1977.

An *index*, as the term is generally used when referring to statistics, is a series of index numbers

expressing a series of numbers as percentages of a single number. For example, the numbers

50 75 90 110

expressed as an index would be

100 150 180 220

Indexes can be used to express comparisons between places, industries, etc., but the most common use is to express changes over a period of time, in which case the index is also a time series. One point in time is designated the base period—it may be a year, month, or any other period—and given the value 100. The index numbers for the measurement (price, quantity, value, etc.) at all other points in time indicate the percentage change from the base period.

If the price, quantity or value has increased by 15% since the base period the index is 115; if it has fallen 5% the index is 95. It is important to note that indexes reflect differences and not absolute levels. If the price index for one item is 110 and for another is 105 it means the price of the first item has increased twice as much as the price of the second. It does not mean that the first item is more expensive than the second.

Each index number in a series reflects the percentage change from the base period. It is important not to confuse an index point change and a percentage change between two numbers in a series. For example, if the price index for butter was 130 one year and 143 the next year, the index point change would be:

$$143 - 130 = 13$$

but the percentage change would be

$$\frac{143 - 130}{130} \times 100 = 10\%$$

Current and constant dollars

When statistical tables give the value of, for example, sales, inventories or investment in *current* dollars, it simply means the values are expressed in terms of their price or cost at the time the survey or measurement was taken. However, the value (or purchasing power) of the dollar changes over time with inflation or deflation. For example, statistics may show that wages have increased substantially over a given period;

but if prices have also gone up, the purchasing power of each wage dollar has decreased. To find out how much "real" wages, as opposed to cash wages, have increased, the wages have to be expressed in dollars which have a constant value over time, i.e., in *constant* dollars. Constant dollars can be used for any value which is expressed in dollars, or for indexes which reflect dollar values. When constant dollars are used in a statistical table, the value of the dollar in one particular year is selected and the year is always clearly stated. At present, most constant-dollar series use 1971 dollars as that is the base year for most major national and international indexes.

Seasonal adjustment

In Canada, the changing climate, or consumer habits related to it, affect nearly all business activity. Construction comes to a slowdown in winter; tourism increases in summer; the Christmas season brings out far more shoppers than any other. The demand for most goods and services changes along with the seasons; consumers want boots in winter, swim suits in summer, and so on. This sometimes makes it difficult to determine the underlying trend from an examination of a series of month by month figures.

For this reason, many series are adjusted to remove the effect of seasonal variations. To do this, seasonal factors for each month are calculated. For example, if, in a typical year, sales in jewellery stores in March are 84% of average monthly sales, the seasonal factor for March for jewellery store sales would be 84. (Average monthly sales are the total annual sales divided by twelve). If sales in December are 174% of the average month's sales, the December seasonal factor would be 174.

Having determined the seasonal factors, the seasonally adjusted series is calculated by dividing the value, quantity or index for that month, by the monthly factor, and multiplying by 100 because the factor is a percentage.

Here is an example of a series on department stores sales in Canada showing the monthly dollar value of sales, the seasonal factors and the seasonally adjusted value of sales. Note that the underlying trend is more clearly identified in the adjusted figures.

Department stores sales, Canada 1976			
Month	Unadjusted or actual sales (1)	Monthly factor (2)	Seasonally — adjusted sales $\frac{(1)}{(2)} \times 100$
1976	Millions of dollars		Millions of dollars
January	393.0	77.73	505.6
February	348.0	68.44	508.5
March	435.5	84.14	517.7
April	520.8	96.14	541.7
May	513.0	98.01	523.4
June	525.8	98.23	535.3
July	504.4	93.98	536.7
August	487.2	88.73	549.1
September	563.9	102.19	551.8
October	572.5	103.12	555.2
November	669.7	120.17	557.3
December	975.7	174.11	560.4

Sales are not the only figures which are seasonally adjusted. Employment, inventories, consumer credit, consumer prices, industrial production and a number of other series are published both seasonally adjusted and unadjusted.

Sampling

Sometimes information cannot be collected from every person, company, etc., in the group being studied because it would take too long or be too costly. Instead, a portion of the group or industry—a *sample*—is scientifically selected so that the results which are obtained are representative of the group as a whole. In general, the accuracy of the sample varies with its size, and this is determined on the basis of what constitutes an acceptable "sampling error" for the purpose at hand. For instance, a sample used to measure employment in a province may not produce accurate statistics for an individual city in that province. That would require a separate, specifically designed sample.

Census

A *census* is a survey in which information is collected from every person, company or institution in the group; in other words, it is a 100% sample. The most widely known census is the Census of Population which is taken every five years and which involves every household in Canada. There are also censuses of industry—for example the Census of Manufactures, Census of Construction and Census of Merchandising and Services.

Classification systems

The objective of *classification systems* is to provide a common framework so that comparable data can be secured from different sources. Classification systems are indispensable to the operations of a statistics agency. Over the years Statistics Canada has developed a number of classification systems. There are systems to classify commodities, imports, exports, geographical areas and occupations, to mention

only the more widely known ones. But probably the most extensively used classification system is the Standard Industrial Classification (SIC).

The SIC is simply a method of classifying the activities that go on at the places where people work. This is done in terms of the "principal" commodity or service concerned. It covers everything from an abattoir to a zoological garden. Every kind of economic activity in Canada is classified to one of 12 divisions, then to a major group within the division, then to a group and in many cases to subgroups. The following excerpt from the SIC manual illustrates how some of the activities in retail trade are classified.

Major Group 2 — Retail Trade

667		Women's Clothing Stores
	667 01	Women's and Misses' Clothing Stores
	667 02	Women's and Misses' Sportwear Stores
	667 03	Lingerie and Hosiery Stores
	667 04	Millinery Stores
	667 05	Fur Stores
669		Clothing and Dry Goods Stores, n.e.s.
	669 01	Family Clothing Stores
	669 02	Children's and Infants' Wear Stores
	669 03	Piece Goods Stores (except Wool and Knitting Accessories)
	669 19	Wool Stores
	669 99	Other Apparel and Accessories Stores
673		Hardware Stores
	673 01	Hardware Stores
	673 02	Paint, Glass and Wallpaper Stores
676		Household Furniture and Appliance Stores
	676 01	Furniture Stores
	676 02	Household Appliance Stores
	676 03	Furniture, Television, Radio and Appliance Stores
	676 04	Television, Radio and Hi-fi Stores
	676 05	Lamp and Lighting Fixtures Stores
	676 06	China and Glassware Stores
	676 07	Floor Coverings Stores
	676 08	Draperies, Curtains and Interior Decoration Stores
	676 09	Antique Stores

676 10	Second-Hand Furniture Stores
676 99	Other Home Furnishings Stores
678	Radio, Television and Electric Appliance Repair Shops
678 01	Television and Radio Repair Shops
678 02	Household Appliance Repair Shops
681	Drug Stores
681 01	Pharmacies
681 02	Patent Medicine and Toiletries Stores
691	Book and Stationery Stores
691 01	Book and Stationery Stores
691 02	Second-Hand Book Stores
692 692 01	Florists' Shops
694 694 01	Jewellery Stores

Confidentiality

In some tables published by Statistics Canada an x replaces a number and a note in the publication, usually in the first few pages, explains that the figure is confidential in order to meet secrecy requirements of the Statistics Act. In general, Statistics Canada is forbidden by law to publish any information which can be related to an individual person, business or organization. For business statistics this generally comes down to a "rule of three", that is that no figure which is made up of data on less than three firms can be published as one of the two would automatically know the facts about the other. While there are usually more than three firms classified to a particular kind of business or industry in Canada, there are often only two in a province or metropolitan area. Even when there are more than three firms, it is sometimes necessary to blank out the figures because one business dominates to such an extent that to publish the data would risk disclosing the firm's information.

Statistics Canada also has to be sure that it does not divulge confidential information by residual disclosure. If, for example, publishing information on widget store sales in Prince Edward Island is prohibited because there is only one widget store in the province, it is obviously impossible for Statistics Canada to publish statistics on widget store sales in each of the other provinces and territories and in Canada as a whole. If it did, it would be a simple matter to work out the figures for P.E.I. and, therefore, the figures for the only firm located there. In these cases Statistics Canada has to suppress the figures for at least one other province or publish only national or regional figures.

There are other ways in which residual disclosure can occur and Statistics Canada goes to great lengths to ensure the confidentiality of the information which is entrusted to it. That is one reason why sometimes it cannot provide the figures users want.

The dos and don'ts of using statistics

We said earlier that statistics are not difficult to use. This is true, but there are a number of pitfalls for the unwary and, while many of them can be avoided by common sense, some might not be readily apparent to the inexperienced user.

To begin with, users should always read the introduction, footnotes and explanatory notes and definitions published with the statistics to be sure the figures do measure what they think they measure. These notes give a clear explanation of the definitions and concepts used. If you need further information, contact Statistics Canada (see page 54).

The above can hardly be emphasized too strongly. There is a myriad of statistical informa-

tion being released to the public each day via newspapers, radio, T.V. and magazines.

Much of it, however, has been summarized and adapted for news purposes, which are a fundamentally important use of the information. But news releases can be misleading or inconclusive when taken out of context and applied to a specific problem. It is very easy to form a wrong opinion when statistics are incomplete, or when one assumes too much in regard to them or accepts them at face value. For example, a city once claimed to be the "healthiest in the nation" because it had the lowest death rate. What was not mentioned was the fact that the city had no major hospital and most serious cases were hospitalized in neighbouring cities. Deaths were recorded where death actually occurred.

Always be wary of simple averages. Remember that they include the two extremes. If three photographers, for instance, have an average income of $20,000 a year, their individual incomes could be $15,000, $16,000 and $29,000, in which case the majority of photographers make substantially less than the average.

Make sure you compare like with like. In the case study where the men's clothing wear retailer evaluated his financial situation, the accountant had to calculate comparable ratios for the firm and for the industry before he could make an accurate assessment.

Do not confuse commodity data with establishment data. As we saw in the case study where the lady considered opening a florist shop, the distinction was important. Not all of the flowers and nursery stock (a commodity classification) sold by retail outlets in Ontario was sold by florists (a type of retail establishment). Conversely, florists in Ontario sold a range of commodities in addition to flowers and nursery stock. One should always, therefore, check classification definitions and make sure he knows what type of data he's using.

A word of caution about forecasting is in order. Everybody forecasts—whether a retailer, manufacturer or head of a family. Forecasting is necessary as many plans for the future require some action in the present. There are many methods of forecasting but they all involve using information about the past and present. If you study a time series and see a trend developing you may be inclined to forecast something in the future, based on the assumption that what has happened in the past will continue to happen. Remember that any such projection of past experience into an uncertain future involves a risk and should not be undertaken without consideration of other information on possible future developments or factors which could cause a change. It is also wise to recognize that some statistical studies require the services of specialists—consultants trained in market research, forecasting, etc. Nobody should be frightened of using statistics but everyone should realize when he is out of his depth and it is time to bring in the experts.

And here is a final word of warning. Statistics are rarely 100% right. At best they are usually only approximations which, in most instances, are a little out of date. While Statistics Canada takes great pains to provide the best possible information, there are a number of factors, for example, sampling error, which can influence the accuracy of particular statistics. Of course, the accuracy of nearly all the data published by Statistics Canada is dependent on the accuracy of the information it receives in answer to its questionnaires. When using statistics, allowances should be made for accuracy and users avoid making too precise judgments on the basis of statistics alone.

This echoes what we said earlier—statistics are only one tool available to business people, and Statistics Canada is only one source of information. Other sources of information are important as well, including industry associations, other federal government departments and agencies, provincial and local governments, chambers of commerce, trade journals and so on. Contacts with associates and one's own observations on local business conditions should also be considered in reaching any decision. But as we have seen in the case studies, statistics can be very useful. Canadian businesses of all sizes have made an investment in Canada's official statistics, both through taxes and through the time taken to complete questionnaires. It is, therefore, only common sense to get some return on that investment.

Appendix

Canadian reference libraries receiving all Statistics Canada publications

Memorial University Library,
St. John's, Nfld.

Dalhousie University Library,
Studley Campus,
Halifax, N.S.

Acadia University Library,
Wolfville, N.S.

Harriet Irving Library,
University of New Brunswick,
Fredericton, N.B.

Bibliothèque de l'université
   de Moncton,
Moncton, N.B.

Ralph Pickard Bell Library,
Mount Allison University,
Sackville, N.B.

Planning Library,
P.O. Box 2000,
Charlottetown, P.E.I.

Bibliothèque municipale,
1210 Sherbrooke east,
Montréal, Qué.

McGill University Library,
3459 McTavish St.,
Montréal, Qué.

Concordia University Libraries,
Montréal, Qué.

Bibliothèque des sciences humaines
   et sociales,
Université de Montréal,
Montréal, Qué.

Bibliothèque de l'Université Laval,
Cité Universitaire,
Ste-Foy,
Québec, Qué.

Bibliothèque générale,
Université de Sherbrooke,
Cité Universitaire,
Sherbrooke, Qué.

Brampton Public Library,
Chinguacousy Branch Library and
   Art Gallery,
150 Central Park Drive,
Bramalea, Ont.

York University Libraries,
4700 Keele St.,
Downsview, Ont.

University of Guelph Library,
Documentation Centre,
Guelph, Ont.

Hamilton Public Library,
Hamilton, Ont.

Mills Memorial Library,
McMaster University,
Hamilton, Ont.

Douglas Library,
Queen's University,
Kingston, Ont.

University of Western Ontario
   Library,
London, Ont.

National Library of Canada,
Canadiana Acquisitions Division,
Government Documents,
Ottawa, Ont.

University of Ottawa Central
   Library,
165 Waller St.,
Ottawa, Ont.

Library of Parliament,
Official Publications Section,
Ottawa, Ont.

Laurentian University Library,
Sudbury, Ont.

Metropolitan Toronto Library,
214 College St.,
Toronto, Ont.

University of Toronto Library,
Toronto, Ont.

Lakehead University Library,
Thunder Bay, Ont.

Public Library,
216 S Brodie St.,
Thunder Bay S, Ont.

Dana Porter Arts Library,
University of Waterloo,
Waterloo, Ont.

Windsor Public Library,
850 Ouellette Ave.,
Windsor, Ont.

Elizabeth Dafoe Library,
University of Manitoba,
Winnipeg, Man.

Provincial Library of Manitoba,
Winnipeg, Man,

University of Saskatchewan Library,
Saskatoon, Sask.

University of Calgary Library,
Government Publications,
Calgary, Alta.

Edmonton Public Library,
Sir Winston Churchill Square,
Edmonton, Alta.

Provincial Library,
Edmonton, Alta.

Simon Fraser University Library,
Burnaby, B.C.

University of British Columbia Library,
Vancouver, B.C.

Vancouver Public Library,
750 Burrard St.,
Vancouver, B.C.

McPherson Library,
University of Victoria,
Victoria, B.C.

Provincial Library,
Victoria, B.C.

Northwest Territories Government Library,
Government of N.W.T.
Yellowknife, N.W.T.

Note: Legislative Libraries also receive all
Statistics Canada publications.

Regional User Advisory Services

Central Inquiries Service,
Statistics Canada,
Ottawa, Ontario.
K1A 0T6
(613-992-2959;
992-4734)

St. John's
  Statistics Canada,
  P.O. Box 8556,
  3rd Floor, Viking Building,
  Crosbie Road,
  St. John's, Newfoundland.
  A1B 3P2
  (709-726-0713)

Halifax
  Statistics Canada,
  1256 Barrington Street,
  Halifax, Nova Scotia.
  B3J 1Y6
  (902-426-5331)

Montréal
  Statistics Canada,
  Alexis Nihon Plaza,
  1500 Atwater Avenue,
  Montréal, Québec.
  H3Z 1Y2
  (514-283-5725)

Toronto
  Statistics Canada,
  25 St. Clair Avenue East,
  Toronto, Ontario.
  M4T 1M4
  (416-966-6586)

Winnipeg
  Statistics Canada,
  Room 500, General Post Office,
  266 Graham Avenue,
  Winnipeg, Manitoba.
  R3C 0K4
  (204-985-4020)

Regina
  Statistics Canada,
  1783 Hamilton Street,
  Regina, Saskatchewan.
  S4P 2B6
  (306-569-5405)

Edmonton
  Statistics Canada,
  10th Floor, Baker Centre Building,
  10025—106th Street,
  Edmonton, Alberta.
  T5J 1G9
  (403-425-5052)

Vancouver
  Statistics Canada,
  Main floor, 1145 Robson Street,
  Vancouver, British Columbia.
  V6E 1B8
  (604-666-3695)

Toll-free access to the Halifax office is available from Charlottetown, Fredericton, Moncton, Saint John and Sydney by calling the operator and asking for ZENITH 22066. Throughout Saskatchewan, the Regina office can be reached by dialing 1-800-667-3524 and in Alberta, the Edmonton office can be reached at 1-800-222-6400.

To subscribe to publications, please write to:

Publications Distribution,
Statistics Canada,
Room 1405, Statistics Canada Bldg.,
Tunney's Pasture,
Ottawa, Ontario.
K1A 0T6

Remember

If you cannot find the figures you want, or you need help in using statistics, contact User Advisory Services at the nearest Statistics Canada office.

Statistics Canada publications are relatively inexpensive and available to everyone. If they do not contain the information you want it may be available in unpublished form.

For many statistics, special tabulations, more precisely tailored to your needs, can be provided at cost.

Always read the small print—the introduction, definitions and notes. Make allowances for the fact that most statistics are approximations.

Government statistics are only one of a number of sources of information available to decision makers.

Don't be frightened of statistics but recognize your limitations and when you need to consult the experts.